

Business Intelligence:

Potentials and Limitations

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Introduction

Often, we hear these expressions: “Real-time Business Information”; “Picturing Strategy With number” or “Crunching Numbers”; what are they actually about? Certainly, they are referring to the concept of Business Intelligence. So, what is Business Intelligence? Indeed, this concept, according to different paradigms has several definitions; but simply put, Business Intelligence refers to information technology applications and practices for the collection, integration, analysis, and presentation of business information. It is also defined as a set of software systems and practices that enable businesses to analyze data and trends through decision support system, and help executives and managers to make better, quantifiable, and informed decisions making. Companies use this tool in order to improve overall corporate performance and reduce inefficiencies throughout the organizations by enhancing cost-efficiency and productivity; building strong customer relationships; optimizing revenue-generating strategies; increasing revenue and maximizing profitability; monitoring trends and discover anomalies (data mining) ; forecasting business opportunities; maintaining compliance and performing risk management (Economics and Statistics application). With the improvement in technology, Business Intelligence now revolves around five main field trends: Management Information System; Decision Support Systems, Knowledge Management Systems, Online Analytical Processing and Data mining; OLAP (Online Application Process) analysis. But why do we need to invest business intelligence system and how it will aid our business? As a corporation, can Business Intelligence make us achieve global competitive advantage? What are its limitations?

Business Intelligence Process

An effective business intelligence system can help businesses reorganize efficiently most aspect of our data management and analysis processes. From organizing financial data, to analyzing market trends, to new business development, Business Intelligence system provide layers of multifunction. The key is clearly to pinpoint the focus and to decide what data is most important to us - If managed in more detail, will help organizations in the long run. Once, the area of interest is defined, the next step is to investigate

the specific Business Intelligence software (especially from a financial standpoint). How much will this system cost us, and how much will it cost us over time in software upgrades, patches and maintenance? Of course, the expected long-term business growth and profits has to outweigh the financial costs. Lastly, how will the selected system integrate with our already existing business intelligence systems? A complete oversight and support of IT architecture is required to install a new intelligence system: involvement of end users in the process, testing etc... These are relevant concerns that need to be addressed by managers and CIO's. With this information at our disposal, one should be able to appropriately choose the right system for the enterprise. One example of Business Intelligence system, Oracle, offers individual applications that can track sales, services, marketing, financial services, human resources, supply functions, and manufacturing. Another model, SAP, the second world leader in business intelligence applications, supports a huge range of industry standards (XML, XMLA, ODBO, J2EE, and JDBC, etc) and also allows for system growth and upgrade. SAP also offers the most proven and reliable system, although it is quite expensive and complex. Another example, Microsoft is probably by far the world's leader in software development (with brand name recognition) is relatively new to the enterprise resource planning market where most business intelligence applications feature. Specifically, Microsoft applications are targeted for individual and small-business users and not large corporations. In effect, there are lots of different business intelligence applications available. In order, to select the right one, we must first decide exactly what type of data it is that we want to manage and also make sure that the application we choose supports this. Secondly, we need to know how much the application will cost us and decide if the utility of the application will outweigh the cost. One must make the right choice in order to stay competitive in the global economy and maybe achieve competitive advantage.

Achieving competitive advantage through Business Intelligence

At the origin, businesses used information technology for automating the processes primarily to reduce labor costs. Subsequently, information technology is used for delivering information with speed and accuracy. Nowadays, businesses want to use the Business Intelligence efficiently for competitive

advantage in aim to improve and optimize business processes, predict the market dynamics accurately. Organizations have reached a critical stage in global economic contest and the business intelligence tools are taking a significant lead in this structure.

Business intelligence analysis requires the capturing of information and storing in a single location (data Warehousing) for effective data analysis. Information is distributed making it difficult and time-consuming to access. Business teams have adapted to this environment by creating user maintained databases and manual to support new types of reporting and analysis. This has resulted in inconsistent data, redundant data storage, significant resource use for maintenance, and inefficient response to changing business needs. So to avoid mishandling these business Intelligence tools, business Intelligence users has to be trained in management to know our to handle the complex flow of information at their disposal. In this perspective, it would make to ask what are the limitations involved.

Limitations of Business Intelligence

“So how come Business Intelligence didn’t predict the World Economic Crisis?”

Indeed, Business intelligence is so prominent in most organizations that the dependence on it is uncontrolled. Actually, Business intelligence supposed to support business entities in order to make better decisions making, it was never meant to warn us of every eventuality. Thus, one should ask - if something is unexpected, how can you design tools to predict it? Certainly, Statistical models or Data Mining will hardly give you precise solutions to what will happen in the future – a range of outcomes, together with probabilities associated with each is the best you can hope for. “Predictive Analytics will not make you prescient; instead it can provide you with useful guidance, so long as you remember it is a prediction, not fact.” Alas, sometimes business intelligence can be presented as capable of achieving the impossible. This path can only lead to disappointment to the real benefits not being seized. It is increasingly common for vendors and consultancies to claim that amazing outcomes can be obtained with Business Intelligence fast, without effort and with minimum corporate hustle. These claims might essentially be pure fallacies.

In real life, what you get out of business intelligence is highly connected with what you put it. So, what are the limits to consider?

Business Intelligence can be size in two limiting perspectives: A maximum viewpoint and the other minimum one. The maximum viewpoint, Business Intelligence is seen as a universal remedy for identification of principal business drivers and for taking optimum business decision. A minimum view point would only claim that BI is essentially an interactive tool for viewing a business situation from many angles and at any user defined level of aggregation of the real business data. How good, how deep and how accurate view you would get depends on the **quality of data** and your ability to model the data appropriately. Though, it would be extremely naive to expect that Business Intelligence would necessarily identify the causes/effects of all aspect of any business events, facts or observed pattern. Business Intelligence always seizes the fact; it is backward looking – look into the past. From the past, we can only discover correlation, a coincident occurrence of two or more facts over many time points and make inferences. Needless to say, it does not tell anything about the causal direction.

Therefore, what real-time Business Intelligence can do for us that no today or yesterday Business Intelligence tools ever did, is to help all users to update his/her past paradigms (his prior views) by reviewing and understanding of the causal mechanism with the help of observed facts. These days, the Business Intelligence scene is largely dominated by data analysis paradigms that are totally unsuited to the data environment of global corporate business world. First, all mass of data available for analysis today is huge and ordinary correlation analysis has very limited utility in such an environment. For instance, every Business Intelligence tools will generate trend analysis of various business metrics – profitability, productivity, marketing, R&D etc. A rising graph would be interpreted as evidence of the strategy followed. This is indeed the worst way to conduct a causal analysis. Every Business Intelligence tools vendor would gloat about their capability to create such graphs across many dimensions and drill down capability. Does the drill down capability necessarily help you to discover any causal mechanism? It may only help you to understand what actually has happened in a particular space-time coordinate.

For this reason, proximate causes are often mistaken for distal causes. The recent economic crisis has been blamed on many of the individual variables within what is a very complex equation. As of now, all Business Intelligence tools are glorified. Although very effective, one must recognize that it is merely a reporting tool and nothing else. It does not add to any intelligence whatsoever- such a tool has yet to come.

Conclusion

“Business intelligence is indeed no crystal ball, and statistical probabilities are not factual certainties”. Short-term financial achievement has clouded our perception of risk. “Similar to how an understanding of mathematics, which can help us calculate the odds of losing a game of chance, is both conveniently forgotten while we are emotionally swept up in a winning streak and of no solace after a big loss or a sustained losing streak, business intelligence can be a forgotten ally in good times and an easy enemy in bad times.” A paradigm shift is more than overdue. “Business Intelligence is not Business Clairvoyance; though, business is far less risky with it than without.” Business Intelligence is a wonderful tool that organization must learn to use wisely and practically, otherwise it will defeat the main purpose of any companies – achieving competitive advantage.

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